

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims presented in the application.

Claim 1 (previously presented): A vacuum control system comprising:

a controller for monitoring the inside pressure of a vacuum vessel using a pressure sensor, and controlling a voltage applied to the DC brushless motor on the basis of an output signal resulting from measurement of the inside pressure of the vacuum vessel by the pressure sensor to control the displacement of an exhaust vacuum pump; and

an air introduction device inserted in a vacuum exhaust path connecting the vacuum vessel to the exhaust vacuum pump for continuously introducing a controlled amount of air into the vacuum exhaust path, wherein

the controller is operable to hold the degree of vacuum in the vacuum vessel constant.

Claim 2 (canceled).

Claim 3 (previously presented): A constant circulation resistance tube which is formed by coaxially inserting a resistance adjusting rod into a hollow capillary and which can control a flow rate of gas circulating between an inner circumference of the hollow capillary and an outer circumference of the resistance adjusting rod by adjusting a circulation resistance of the gas, wherein the circulation resistance can be adjusted by varying an insertion length of the resistance

adjusting rod inserted into the hollow capillary and can be fixed by fitting a separation preventing short tube to an outer circumference of the hollow capillary at an opening end.

Claim 4 (previously presented): The vacuum control system according to claim 1, wherein the air introduction device comprises a constant circulation resistance tube which is formed by coaxially inserting a resistance adjusting rod into a hollow capillary and which can control a flow rate of gas circulating between an inner circumference of the hollow capillary and an outer circumference of the resistance adjusting rod by adjusting a circulation resistance of the gas, wherein the circulation resistance can be adjusted by varying an insertion length of the resistance adjusting rod inserted into the hollow capillary and can be fixed by fitting a separation preventing short tube to an outer circumference of the hollow capillary at an opening end.

Claim 5 (currently amended): A vacuum degassing apparatus for removing dissolved gas from liquid ~~isolated with a gas permeation diaphragm, comprising:~~

a vacuum vessel ~~by reducing the inside pressure of a vacuum vessel~~ including a [[the]] gas permeation diaphragm;

[[with]] an exhaust vacuum pump; and

a ~~the vacuum degassing apparatus employing the~~ vacuum control system according to ~~claim 1,~~ the vacuum control system including:

a controller for monitoring the inside pressure of the vacuum vessel using a pressure sensor, and controlling a voltage applied to a DC brushless motor on the basis of an output

signal resulting from measurement of the inside pressure of the vacuum vessel by the pressure sensor to control the displacement of the exhaust vacuum pump; and
an air introduction device inserted in a vacuum exhaust path connecting the vacuum vessel to the exhaust vacuum pump for continuously introducing a controlled amount of air into the vacuum exhaust path, wherein
gas dissolved in the liquid is isolated with the gas permeation diaphragm by reducing the inside pressure of the vacuum vessel by operating the exhaust vacuum pump, and by operating the controller to hold the degree of vacuum in the vacuum vessel constant.

Claim 6 (canceled).

Claim 7 (previously presented): The vacuum degassing apparatus according to claim 5, wherein the air introduction device comprises a constant circulation resistance tube which is formed by coaxially inserting a resistance adjusting rod into a hollow capillary and which can control a flow rate of gas circulating between an inner circumference of the hollow capillary and an outer circumference of the resistance adjusting rod by adjusting a circulation resistance of the gas, wherein the circulation resistance can be adjusted by varying an insertion length of the resistance adjusting rod inserted into the hollow capillary and can be fixed by fitting a separation preventing short tube to an outer circumference of the hollow capillary at an opening end.

Claim 8 (new): The constant circulation resistance tube of claim 3, wherein the constant circulation resistance tube is configured such that the circulating gas flows along substantially the entire length of the resistance adjusting rod within the hollow capillary.

Claim 9 (new): The constant circulation resistance tube of claim 3, wherein a waste inflow preventing filter is fitted to an opening of the separation preventing short tube.